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Framing Financial Incentives to Increase Physical Activity Among Overweight and Obese Adults

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TO THE EDITOR

Financial incentives can reinforce consumer behavior (for example, offering money back for using a specific credit card), and these procedures are gaining traction to modify health behaviors. Patel and colleagues' study examining the efficacy of incentives to reinforce walking 7000 steps daily (1) is commendable, and the results underscore the complex nature of these interventions and the behaviors that they are designed to influence. Reinforcement interventions are grounded in not only behavioral economics but also behavior analysis, which relies heavily on principles of operant conditioning. For example, reinforcing successive approximations toward the goal behavior (that is, shaping) typically works best.

Participants in Patel and colleagues' study received reinforcement only if they achieved 7000 steps per day; meeting this criterion may have been relatively easy or difficult, depending on their baseline activity levels. When we reinforced persons to increase steps gradually over time, more than 80% achieved the recommended goal of greater than 10 000 steps per day (2). The extent to which participants in the gain-incentive group in Patel and colleagues' study ever received incentives for walking 7000 steps remains unclear, whereas almost all participants in the loss-incentive group experienced the adverse contingencies regularly.

Magnitude of incentives is also important to effect behavior change. The incentives in our study (2) were approximately 4 times greater than those in Patel and colleagues' study, and more participants in our study achieved the goal. In addition, many efficacious gain-incentive interventions provide increasing magnitudes of reinforcement for sustained behavior change (3), but Patel and colleagues' study did not include this feature. Thus, different results can be obtained depending on the nature of the reinforcement systems and the behavior being modified.

In prior studies by Patel and colleagues and other investigators (3, 4), probabilistic gain-incentive systems generally yielded benefits relative to nonincentive control conditions. Whether the lack of efficacy of the gain-incentive conditions in this study (1) relates to the

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overall low magnitude of reinforcement or the nature of the reinforcement system is unclear. Further, none of Patel and colleagues' reinforcement systems differed significantly in terms of outcomes (1); however, patient acceptability of gain versus loss contingencies likely differs, especially if patients are expected to contribute their own money (5). As research and practice move forward, recognizing the complexity of behavior change and considering various behavioral and patient variables in designing and implementing efficacious reinforcement interventions are important.

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